UNIVERSITY OF GONDAR

COLLEGE OF MEDICINE AND HEALTH SCIENCE

INSTITUTE OF PUBLIC HEALTH

DEPARTMENT OF HUMAN NUTRITION

Optimal complementary feeding and associated factors among HIV exposed infant and young children aged 6-18 months in the selected Amhara region hospitals, Northwest Ethiopia.

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1. _____ _____

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Acronyms/ abbreviations

AIDS	Acquired Immune Deficiency Syndrome
AOR	Adjusted Odds Ratio
ANC	Anti natal Care
ART	Antiretroviral Therapy
COR	Crude Odds Ratio
CS	Cesarean Section
EDHS	Ethiopia Demographic and Health Survey
ETB	Ethiopian Birr
FMOH	Federal Ministry of Health
GA	Gestational Age
HIV	Human Immune Virus
HO	Health Officer
IRB	Institution Ethical Review Board
IYCF	Infant and Young Children Feeding
MF	Mixed Feeding
MOH	Ministry of Health
PMTCT	Prevent Mother to Child Transmission
PNC	Post natal Care
SPSS	Statically Package for Social Science
SVD	Spontaneous Vaginal Delivery
SNNPR	Southern Nations, Nationalities and Peoples' Region
UNICEF	United Nations Children Fund
WHO	World Health Organization

Abstract

Background: Inappropriate complementary feeding is the one of the major causes of child under nutrition. There is scarcity of information regarding optimal complementary feeding among HIV exposed children in Ethiopia.

Objectives: To assess optimal complementary feeding practice and associated factors among HIV exposed infants and children aged 6-18 months in selected Amhara region hospitals, Northwest Ethiopia, 2017.

Methods: Institution based cross sectional study was conducted from March26 to April 30, 2017. A total of 420 study participants were included in the study. Systematic random sampling was employed to select study participants. Pretested,-structured interviewer administered questionnaire was used to collect data. The data were entered into EPI INFO version 3.1, and analyzed using SPSS version 20. Both Bivariable and Multivariable analysis were applied to identify factors associated with optimal complementary feeding.

Result: the prevalence of optimal complementary feeding among HIV exposed children was 25.2% (95%CI: 21, 29%). Child age; 9-11 months [AOR= 2.26; 95% CI: 1.09, 5.08], 12-18 months [AOR= 3.69; 95%CI: 1.76, 7.75], rich wealth status [AOR= 2.52; 95%CI: 1.33, 4.77], mother's HIV disclosure status [AOR= 1.98; 95%CI: 1.18, 3.32], father's educational status; primary [AOR= 2.14; 95%CI: 1.04, 4.42], secondary [AOR= 2.14; 95%CI: 1.07, 4.26], Diploma and above [AOR= 2.58; 95%CI: 1.33, 5.00] were found to be associated with optimal complementary feeding.

Conclusion: This study revealed that optimal complementary feeding was low compared to WHO recommendation. Child age, household wealth status, mother's HIV disclosure status and paternal educational status were associated with optimal complementary feeding practice among HIV exposed children. Therefore, strengthening of maternal counseling on HIV disclosure and complementary feeding initiation is recommended.

Key words: optimal complementary feeding, HIV exposed children, Amhara region, Ethiopia.

1. Introduction

1.1 Statement of the Problem

In sub Saharan Africa, 1.6 million under 15 children live with HIV/AIDS which is 87% of the global in 2015 (1).In Amhara, Oromiya, SNNPR, Tigray regions of Ethiopia HIV/AIDS results in higher death ,chronic illness that cause decreased in physical, financial, human capital and poor consumption of different diets with adequate frequency (2) Different studies showed that HIV exposed and infected children are more likely to be undernourished and have higher risk of morbidity and mortality compared to their counterparts (3-10).

Complementary feeding starts at 6month when breast milk alone is not sufficient to meet nutritional requirements of an infant and covers up to 23months, which is the critical period for normal growth and development of a child (1).

Under nutrition among infant and young children is a serious public health problem of Ethiopia. According to EDHS 2016, about 38 %, 10% and 28% of under five children are stunted, wasted and underweight, respectively (11). Undernourished children will have poor health, impaired cognitive development, poor physical growth, reduced potential for manual work, which have a cumulative effect on country growth and development. In addition, under nutrition has been liked to adverse functional consequences, such as overweight, obesity, insulin resistance, hypertension, dyslipidaemia and other chronic non-communicable diseases during adolescent and adulthood (12).

Inappropriate complementary feeding is the one of the major causes of child under nutrition. Poor status of HIV positive children will have rapid disease progression, decline immune resistance, growth failure, and higher risk of developing infectious diseases and further worsening of nutritional status (11, 13-16).

To alleviate these problems, the World Health Organization (WHO) , United Nations Children's Fund (UNICEF) develops appropriate complementary feeding guideline for HIV positive mothers (17, 18). Similarly, the country Ethiopia has prepared national

strategy of infant and young child feeding (IYCF) to improve free survival of HIV exposed infants. However, only, 7%, 65.6% and 53.3% of infant and young children received the recommended acceptable diet, minimum dietary diversity and meal frequency, respectively (11,19) . In addition, there is scarcity of information regarding optimal complementary feeding of HIV exposed children in Ethiopia. Therefore the objective of this study was to assess optimal complementary feeding practice and identify associated factors of HIV exposed children in North Gondar zone, Northwest Ethiopia.

1.2 Literature Review

1.2.1 Optimal Complementary Feeding

World Health Organization (WHO) guideline of 2016 on HIV and infant feeding recommends that HIV positive mothers should exclusively breast feed for 6months then introduce appropriate complementary foods at 6-8 months and continue breast feeding for 24 months or beyond (17).

Community-based assessment of infant feeding practices on PMTCT in rural Zimbabwe showed infants were given Fluid /foods other than breast milk between 1 week and 14 months of age (20) another study in Abidjan, Cote d'Ivoire on children who are born to HIV-infected mothers showed that complementary food stars at 7 month of age (21).

Analysis of demographic and health survey data on infant and young children feeding (IYCF) practices in Ethiopia and Zambia 2012 for IYCF compression showed that, timely introduction of complementary food was 90% in Zambia, 60.7% in Ethiopia, minimal dietary diversity 7% in Ethiopia, 37% In Zambia (37%) (22). In Amhara region of Ethiopia, timely initiation of complementary feeding and minimal dietary diversity is 34.6 % and 2.1% respectively (23).

Complementary feeding practice in Ethiopia is low. Institution based cross sectional study on complementary feeding practice of HIV exposed 6-17 month children in southern Ethiopia showed timely initiation of complementary feeding is 42%, minimum dietary diversity is 34.4% and 46.4% of children fed with minimum dietary frequency (19). Institution based cross sectional study in East Gojjam, Ethiopia, among HIV exposed infants showed that timely initiation of complementary feeding was 84.67% (24). another study 2011 in Gondar town showed that 89.5% of mothers followed the recommended way of infant feeding practice (25).

Complementary foods need to be safe and adequate Different studies showed that infants and young children feed with some foods more frequently and other food groups in smaller proportion. Cross sectional study in Tanzania dare salaam on Infant feeding practices among HIV-positive women showed that Porridge, water, fresh fruit was the

most frequent food fed to infants 94.9%, 92.9 and 87.8 % respectively .and other foods cow milk with sugar and water, powder milk, tea and packaged juice in small proportions (26). Study conducted in urban Uganda 2009 on nutritional status of children (6-59month) among HIV-positive mothers /caregivers showed that foods mostly consumed were cereals, sugar/honey, vegetables, legumes and oils. There was low consumption of eggs (16.0%), fruits (40.3%), animal foods (13.9%), fish (31.9%) and milk/milk products (45.8%)and 59% households consume less than six food groups and 80% households consume less than three meals per day (27). Prospective cohort study in cote divore on HIV exposed children showed that 83% and 74% of the children had received fish and eggs respectively (21). In southern Ethiopia HIV exposed children consumed whole grains (67%), pulse (22.5), animal sources foods (9.9), vitamin A rich fruits and vegetables (37.4%) (19).

1.2.2. Associated Factors

Feeding practice affected negatively and positively by different factors. Study conducted in rural Bangladesh using randomized trial study design showed that mass media increases complementary feeding practice (28).In Ethiopia maternal education, residence, wealth, religion, child age exposure to media and contact with health worker are associated with IYCF practice (23).

Different institution based studies among HIV exposed children in Africa showed that there are different factors that affect the recommended dietary practice of children, study in Tanzania, 2015 showed that complementary feeding is associated with maternal and child age, disclosure of HIV status, house hold asset score and enrollment facility (29).different studies in Ethiopia showed that sex (30), age, birth order of a child affect complementary feeding (31, 32).

Study in North Gondar, Northwest Ethiopia 2011 showed that occupational status, availability of supply, disclosure of HIV status to the spouse, place of delivery and sufficient breast milk of the parents are associated with feeding practices of HIV exposed children (25). in Sidama zone southern Ethiopia 2015, residence, food prohibition, infant age, family size, number of under 5 children, time when mother know her sero status has significant effects on complementary feeding practice of HIV

exposed children(19).another study in East Gojam zone Northwest Ethiopia 2016, showed that mother presence and number of ANC follow up, being on ART, knowledge on infant feeding were positively associated with IYCF practices (24).

Most literatures on IYCF are on the infant and young children feeding practice of the general population not on HIV exposed infants and this limited IYCF practices of HIV exposed children are on the exclusive breast feeding indicators. Optimal complementary feeding practice and its determinants has not been fully investigated in Ethiopia.

1.2.3 Conceptual frameworks

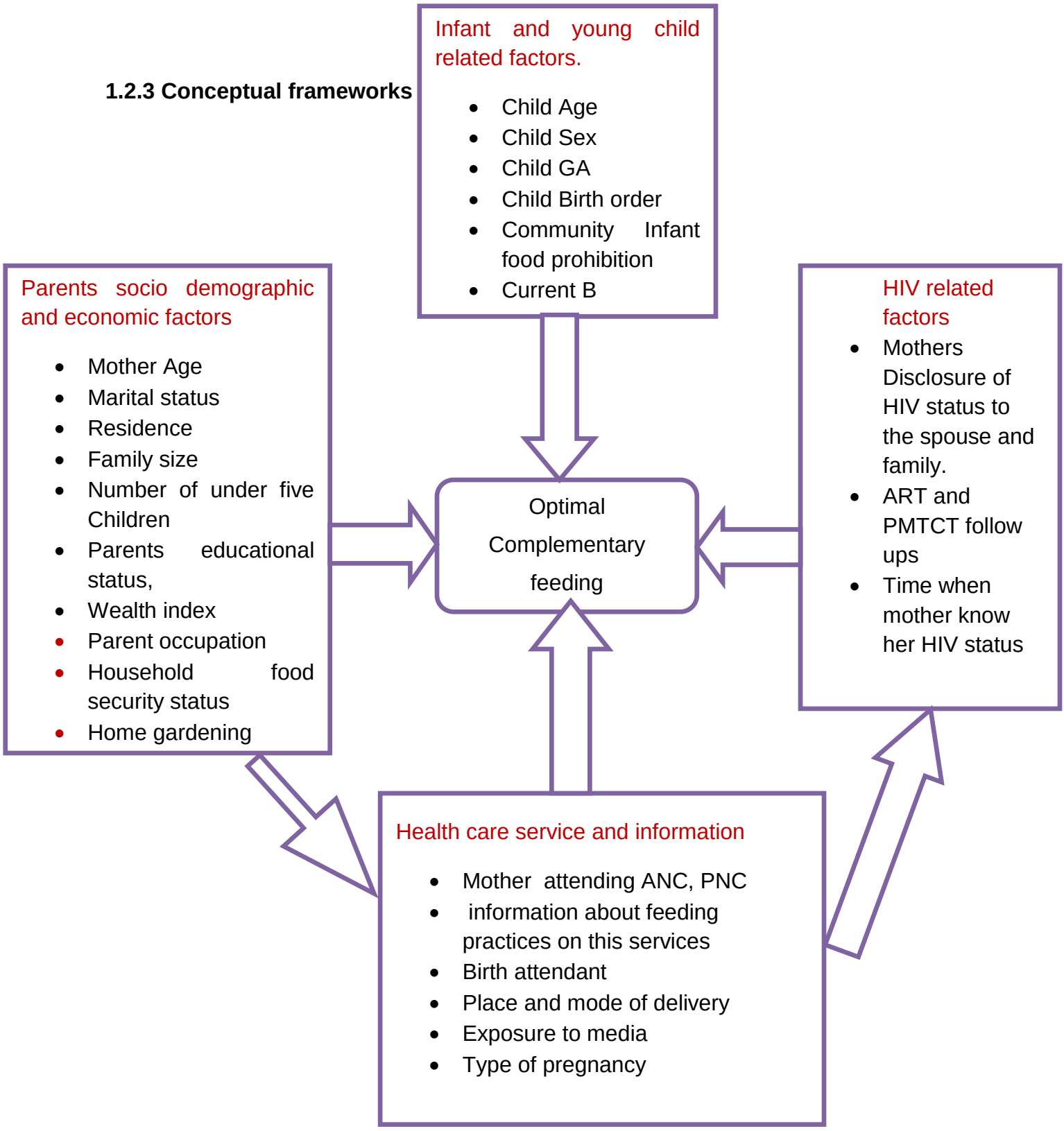

Figure 1: Conceptual framework for factors influencing optimal complementary feeding of HIV exposed children age 6-18 month. (19, 23-25)

1.3 Justification of the study

HIV/AIDS is one of the major public health problems in the world specially sub Saharan Africa including our country Ethiopia. The problem of HIV/AIDS is multifaceted especially during infancy and early childhood. Malnutrition increase the risk of children mortality from infectious disease and one of the causes is poor optimal complementary feeding practice. Children born to HIV infected mothers have greater mortality and morbidity than unexposed one.

There are many studies on exclusive breast-feeding of HIV exposed infants (33-37) but there are limited studies on optimal complementary feeding and its associated factors among HIV exposed infants and young children. In addition, the previous studies mainly focus on timely imitation of complementary feeding practice. The current study will assess complementary feeding using four key indicators of complementary feeding.

This study will also help to policy makers, governmental and non-governmental organization to design appropriate strategy and intervention to prevent nutritional problems among HIV exposed infant and young children. Furthermore, the study will serve as baseline data for future researchers.

2. Objectives

2.1 General objectives

- ✓ To assess optimal complementary feeding and associated factors among HIV exposed infants and young children aged 6-18 month in Amhara region hospitals, Northwest Ethiopia, 2017.

2.2 Specific objectives

- ✓ To determine optimal complementary feeding among HIV exposed infant and young children aged 6-18 month in Amhara region hospitals, 2017.
- ✓ To identify associated factors of optimal complementary feeding among HIV exposed infants and children aged 6-18 month in Amhara region hospitals, 2017.

3. Methods and materials

3.1 Study design and period

Institution based quantitative cross sectional study was conducted from March 26 to April 30, 2017

3.2 Study area

The study was conducted in Amhara region which is one of nine regions in Ethiopia, According to Health and Health Related Indicator, EFY 2007; the region has 20,399,004 total populations. The main agricultural products are teff, barely, wheat, oil crops and maize. There are 42 governmental hospitals in the region (38). The study was conducted in five big hospitals namely Gondar referral hospital, Metema hospital, Debark hospital, Felege Hiwot referral hospital and Debre Tabor hospitals which provide services for the largest population.

3.3 Source population

All HIV exposed Infants and young children aged 6-18 months on PMTCT service of the selected hospitals of Amhara region.

3.4 Study population

HIV exposed children aged 6-18 month on PMTCT services of the selected hospitals of Amhara region.

3.4.1 Inclusion criteria

All HIV exposed children aged 6-18 months who came to the service during data collection period.

3.5 Sample size and sampling procedures

3.5.1 Sample size determination for proportion

Sample size was determined using single population proportion formula $n = \frac{\left((z^{\alpha}/_{2})^{2} \times p(1-p)\right)}{(d)^{2}}$ Assuming 95% confidence interval (CI), proportions taken from study in sidama zone, Ethiopia and 5% margin of error.

Table 1: sample size of optimal complementary feeding for proportion by single population proportion formula, the assumptions. Computed by using EPINFO version7

s. no		Assumptions			
		Proportion	Margine of error %	Confidence interval (%)	Sample size
1	Timely initiation	42%	5	95	374
2	Dietary diversity	34.4%	5	95	347
3	Dietary frequency	46.4%	5	95	382

By considering 10% non respondent rate for the maximum sample size (382)

382 × 0.1= 38.2

382+38.2=420

3.5.2 Sample size determination for factors:

Using study in North Gondar, Ethiopia

Table 2: sample size for optimal complementary feeding using factors by the assumptions.

	Assumptions				
Factors	Ratio	Power %	CI%	Proportion	Sample size
Disclosure of HIV status to spouse	1:1	80	95%	P1 =91 P2=77	214
Insufficient milk	1:1	80	95%	P1=79 P2=91	276

N.B: Sample size of the first objective was higher than the second therefore I used it as final sample size n =420.

3.5.3 Sampling techniques and procedures

From functional hospitals in Amhara region five were selected by purposive sampling technique. Then all (420) HIV exposed children attending PMTCT were allocated proportional to size to each selected hospitals and Lists of infants and young children age from 6-18 months taken from hospitals and sampling frame was constructed. Each infants and children were selected using systematic randomly sampling at every other intervals. Finally, their mothers/care givers were interviewed with structured questionnaires that were developed by world health organization (WHO) in 2008.

3.6 Study variables

3.6.1 Dependent variables

Optimal complementary feeding

3.6.2 Independent variables

Family socio demographic and economic variables: parental age, occupational status, educational status, wealth index, marital status, family size, number of under five children, residence, household food security, home gardening and purpose of home gardening.

Child characteristics: age, sex, gestational age, birth order and infant food prohibition.

Health care service and information: Attending ANC, PNC follow ups and information about feeding practices on this services, Place and mode of delivery, exposure to media, birth attendant, type of pregnancy.

HIV/AIDS related variables: Disclosure of HIV status to the spouse and family, mothers ART status, time when mother know her HIV status, PMTCT, ART follow ups and information on this services.

3.7 Operational definitions

Introduction of solid, semi-solid or soft foods: Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods(39)

Minimum dietary diversity: Proportion of children 6–23 months of age who receive foods from 4 or more food groups from seven food groups(39)

Minimum meal frequency: Proportion of breastfed and non-breastfed children 6–23 months of age, who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children)2 times for breastfed infants 6–8 months, 3 times for breastfed children 9–23 months and 4 times for non-breastfed children 6–23 months(39).

Minimal acceptable diet: proportion of Breastfed children 6–23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day, non-breastfed children 6–23 months of age who received at least 2 milk feedings and had at least the minimum dietary diversity and the minimum meal frequency during the previous day(39)

Optimal complementary feeding: Proportion of children who fulfill the above 4 indicators (32)

Suboptimal complementary feeding: proportion of children who doesn't fulfill at least one of timely initiation, minimal dietary diversity, minimal meal frequency, minimal acceptable diet(32)

House hold food security: The tool was taken from FANTA 2007 and have 9 main question and in each question have 9 frequency question and there are three alternative (rare (1), sometimes (2), and often (3 points) by multiplying (3) this will be gotten 27. Considering

Food secure: if the Household food security level summations will ≤1 point out of 27 scores

Mild Food insecure: if the households food security level summations will be 2 to 6 point out of 27 scores**.**

Moderate food insecure: if the households food security level summations will be 7 to 10 point out of 27 scores

Severe food insecure: if the house hold food security level summations will be >10 point out of 27 scores (40).

Satisfactory media exposure: Women aged 15–49 years who listen to radio, or watch television at least once a week (31)

Household wealth status: The respondent's economic status were assessed by using wealth index incorporating monthly income, House hold asset, bank and credit deposition, number of domestic animals, type of house and main source of the HH food. The wealth index score were equally divided into 3 (Tertile) categories designating (rich, middle, and poor).

3.8 Data collection, quality control and analysis

3.8.1 Data collection tool and procedure

A structured interviewer administered questionnaire was used to collect data. The questionnaire was first prepared in English and translated into the local language (Amharic) and finally, back translated to English to maintain consistency. The questionnaire was adopted from WHO infant and young children manual and by reviewing different literatures. The questionnaire contained different maternal, child, health service, communication related characteristics. Fifteen health care professionals (10 BSC nurses and 5 health officer for data collection and supervision, respectively) were recruited. Primarily mothers/caregivers were interviewed to determine child optimal complementary feeding using a 24 hour dietary recall methods.

3.8.2 Data Quality Control

Before data collection questionnaire pretest (5%) was conducted out of the study setting. Two days training was given to the data collectors and supervisors. During data collection the supervisor and principal investigator were observing how data collectors run the questions to the respondents, monitor the data completeness and quality; feedback was given before the next data collection period.

3.8.3 Data processing and analysis

All collected questionnaire was checked for completeness and consistency and was coded and entered into the EPINFO version 3.1 and analyzed using SPSS version 20. Binary logistic regression was fitted to identify factors associated with optimal complementary feeding and those variables with p-value <0.2 was fitted to multivariable logistic regression analysis. Both crude odds ratio and adjusted odds ratio with the corresponding 95% confidence interval was calculated to show the strength of association. In multivariable analysis variables with p-value <0.05 were considered statistically significant. Descriptive statistics like percentage mean and standard deviation were used for the variable presentation. Tables and figures were also used for data presentation**.**

4. Ethical considerations

Ethical clearance was obtained from the Institutional Ethical Review Board (IRB) of Gondar University. Permission letter was written to the hospital administrations from university. Informed consent was obtained from each parents/caregivers after informing them all the purpose, notifying that they have the right to refuse or stop at any point of the interview. The confidentiality of participants and health care provider related data was maintained by avoiding possible identifiers such as name of the respondents. Only numerical identification was used as a reference and then after the whole data collection process, the questionnaires were kept safe throughout the whole process of the research work. At the end when we found children with sub optimal feeding practice nutritional education was given to the mothers/caregivers.

5. Result

5.1 Socio demographic and economic characteristics of parents

A total of 420 HIV exposed 6-18 years old children were enrolled in the study with 100% response rate. The mean (±SD) age of the mother is 30.80±4.915 years. More than half 255 (60.7%) of the mothers were married. About 194 (46.2%) of the mothers had no formal education. Regarding fathers occupation 114(27.1%) were government employees, and 72 (17.1%) were daily laborers. (Table 3)

Table 3: Parental socio demographic and economic characteristics of children aged 6-18 months in PMTCT sites of Amhara region, Northwest Ethiopia, 2017 (n=420).

Variables	Frequency(n)	Percentage (%)
Age of the mother		
18-24	41	9.8
25-29	125	29.8
30-46	254	60.5
Marital status		
Single	37	8.8
Widowed	38	9.0
Separated	42	10.0
Divorced	48	11.4
Married	255	60.7
Educational level of mother		
Not formally educated	194	46.2
Secondary level	83	19.8
Primary level	82	19.5
Diploma and above	61	14.5
Educational level of father		
Primary level	76	18.1
Secondary level	79	18.8
Diploma and above	108	25.7

Not formally educated	157	37.4
Occupation of the mother		
Government employee	66	15.7
Private employee	60	14.3
Merchant	37	8.8
Daily laborer	44	10.5
Housewife	190	45.2
Student	12	2.9
Farmer	11	2.6
Occupation of father		
Government employee	114	27.1
Private employee	65	15.5
Merchant	71	16.9
Daily laborer	72	17.1
Student	6	1.4
Farmer	56	13.3
Driver	36	8.6
Residence		
Urban	320	76.2
Rural	100	23.8
Family size		
<=3	132	31.4
4-5	197	46.9
>=6	91	21.7
Number of under five children		
1	340	81.0
2	72	17.1
>=3	8	1.9
Home gardening availability		
Yes	71	16.9

No	349	83.1
Purpose of home gardening (n=71)		
Sell	11	0.15
Consumption	31	0.44
Both for sell and consumption	29	0.41
Wealth index		
Rich	144	34.3
Middle	136	32.4
Poor	140	33.3
Household food security		
Secure	11	2.6
Mild insecure	66	15.7
Moderate insecure	77	18.3
Sever insecure	110	26.2

5.2 Infants and young child related characteristics

Out of the total children 224 (53.3%) were males. Almost half, 208 (49.5%), of the children were in the age group between 12-18 months. The mean (±SD) age of the child was 11.56±3.32 months (Table 4).

Table 4: Infants and young child related characteristics of the children aged 6-18 months, in PMTCT sites of Amhara region hospitals, Northwest Ethiopia, 2017 (n=420).

Variable	Frequency(n)	Percentage (%)
Sex of the child		
Male	224	53.3
Female	196	46.7
Age of the child in month		
6-8	90	21,4
9-11	122	29.0
12-18	208	49.5
Child birth order		
1^{st}	135	32.1
2^{nd} -5^{th}	208	49.5
>=6^{th}	77	18.3
Food prohibition		
Yes	152	36.2
No	268	63.8

5.3 Health care service utilization and information related factors

The majority of the mother's 223 (53.1%) were having ANC follow up 1-3 times, 353 (84%) of the mothers delivered in health institution, 199 (47.4%) were having satisfactory media exposure (table 5).

Table 5: Health care service utilization and information related factors of HIV exposed Children aged 6-18 month in Amhara region hospitals, Northwest Ethiopia, 2017 (n=420)

Variable	Frequency(n)	Percentage (%)
Planned pregnancy		
Yes	251	59.8
No	169	40.2
Number of ANC visits		
Not at all	84	20.0
1-3times	223	53.1
4times and above	113	26.9
Information on ANC		
Yes	210	50.0
No	126	30.0
Place of delivery		
Home	67	16.0
Health institution	353	84.0
Birth attendant		
Traditional birth attendant	67	16.0
Health worker	353	84.0
Type of delivery		
SVD	354	84.3
CS	66	15.7
Exposure to media		
Unsatisfactory	221	52.6
Satisfactory	199	47.4

5.4 Maternal HIV/AIDS infection related factors

Of all 420 HIV exposed children 384 (91.4%), and 370 (88.1%) were on PMTCT and ART follow ups, respectively. About 232 (60.4%) of the mothers had got information about child feeding on PMTCT services. More than half, 234(55.7%), of the mothers know their status before pregnancy, and 253 (60.2%) of the mothers disclose their HIV status (Table 6)

Table 6: Maternal HIV/AIDS infection related factors of HIV exposed 6-18 years aged children in PMTCT sites of Amhara region, Northwest Ethiopia, 2017. (n=420)

Variable	Frequency (n)	Percentage (%)
PMTCT follow up		
Yes	384	91.4
No	36	8.6
Mother get information about child feeding on PMTCT		
YES	232	60.4
NO	152	39.6
When do mother know about her HIV status		
Before pregnancy	234	55.7
During pregnancy	109	26.0
During delivery	38	9.0
After delivery	39	9.3
Maternal HIV status disclosure		
Yes	253	60.2
No	167	39.8
ART follow up		
Yes	370	88.1
No	50	11.9
Did mother get information about child feeding on ART		
Yes	234	55.7
No	136	32.4

5.5 feeding practice of HIV exposed children

Of the total children 265(63.1%), were breast-feeding. More than half 251 (59.8%) of the children started breast-feeding immediately after birth. 400(90.2%) of the children were started complementary feeding.

Table 7: feeding practice of HIV exposed children 6-18 month age in PMTCT site of Amhara region, Northwest Ethiopia 2017(n=420).

Variable	Frequency	Percentage
Currently breast feed		
Yes	265	63.1
No	155	36.9
When stop breast feeding		
At birth	26	6.2
Before 6 month	9	2.1
At 6 month	45	10.7
After 6 month	75	17.9
When start breast feeding		
Immediately	251	59.8
After a hour	110	26.2
After a day	38	9.0
Start complementary feeding		
Yes	400	95.2
No	20	4.8
Complementary start age		
6-8	90	21.4
other	330	78.6

5.6 Optimal complementary feeding practice

Proportion of HIV exposed children who received optimal complementary foods were found to be 25.2% (95%CI: 21, 29%).

From the total of 420 HIV exposed children aged 6-18 months introduction of solid, semi solid, soft foods, minimum dietary diversity, minimum meal frequency and minimum acceptable diet were, 65.5%, 44.0%, 70.7% and 36.9 % respectively (figure2).

Complementary feeding of HIV exposed children.

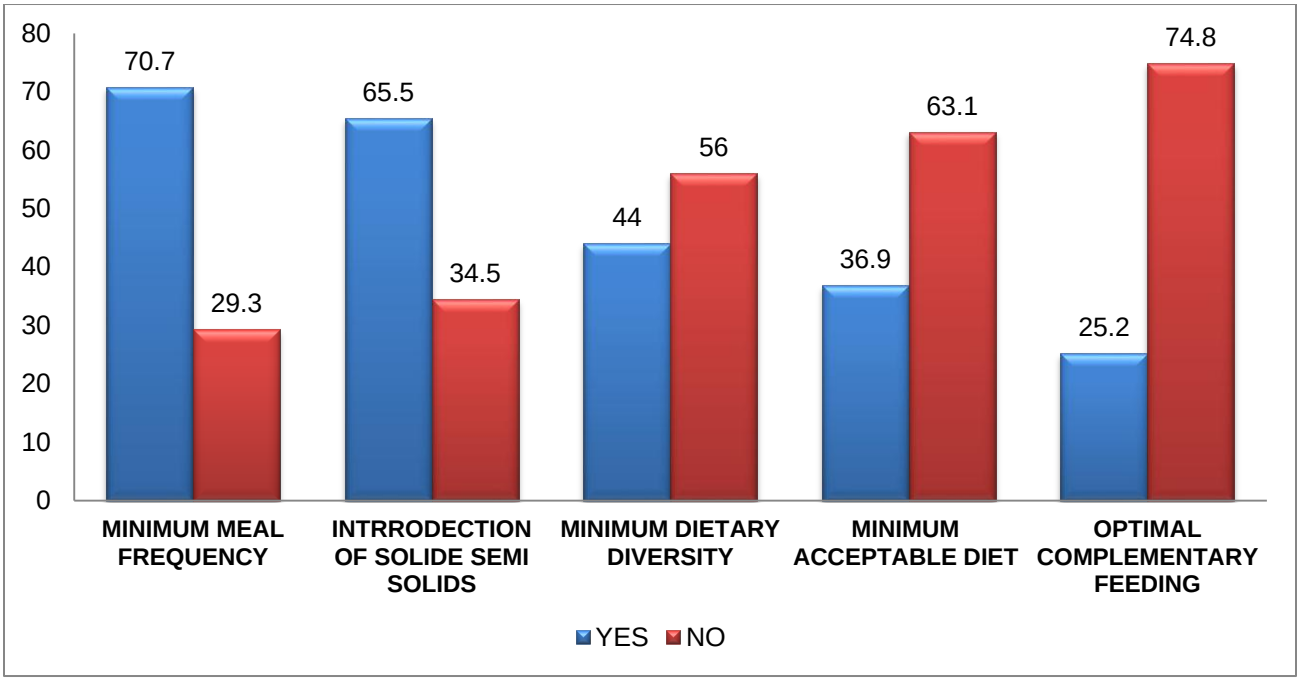

Figure 2: complementary feeding practiced among HIV exposed 6-18 months children, in PMTCT sites of selected Amhara region hospitals, Northwest Ethiopia, 2017.

5.7 Factors affecting optimal complementary feeding practice

Multivariable binary logistic regression output indicated that child age, household wealth index, mother's disclosure of her HIV status and father's educational status were significantly associated with optimal complementary feeding of a HIV exposed child.

HIV exposed Children aged 9-11months(AOR= 2.26; 95%CI: 1.09, 5.08) and 12-18months (AOR= 3.69; 95%CI: 1.76, 7.75) were 2.26 and 3.69 times more likely to receive optimal complementary feeding than exposed children aged 6-8 years old, respectively.

HIV exposed children who were born from rich family wealth status (AOR=2.52; 95%CI: 1.33, 4.77) were 2.52 times more likely to feed with optimal complementary foods than those children from poor families.

HIV exposed Children whom mothers disclose their HIV status (AOR=1.98; 95% CI: 1.18, 3.32) were 1.98 times more likely to received optimal complementary foods than those children whom mothers don't disclose their status.

In addition children having primary (AOR=2.14; 95%CI: 1.04, 4.42), secondary (AOR=2.14; 95%CI: 1.07, 4.26), diploma and above (AOR=2.58; 95%CI: 1.33, 5.00) educational level of father's were having 2.1, 2.1 and 2.6 times higher benefit of receiving optimal complementary foods than those from illiterate fathers, respectively.

Table 8: A bivariable and multivariable logistic regression output showing factors associated with optimal complementary feeding practices among HIV exposed 6-18 months of children, in amhara region hospitals, Northwest Ethiopia, 2017.

	Optimal complementary feeding practice			
Variables	**YES (1)**	**NO (0)**	**COR (95%CI)**	**AOR(95%CI)**
Marital status				
Married	69(27.1%)	186(72.9%)	1.00	1.00
Separated	13(31.0%)	29(69.0%)	1.21(0.59, 2.46)	1.52 (0.64, 3.64)
Single	6(16.2%)	31(83.8%)	0.52 (0.21, 1.31)	1.17 (0.37, 3.730
Divorced	7(14.6%)	41(85.4%)	0.46(0.19, 1.07)	0.74 (0.27, 1.99)
Widowed	11(28.9%)	27(71.0%)	1.09 (0.52, 2.33)	1.81 (0.72, 4.54)
Mother educational status				
No formal education	39 (20.1%)	155 (79.9%)	1.00	1.00
Primary level	22 (26.8%)	60 (73.2%)	1.46(0.79, 2.66)	0.62 (0.28, 1.37)
Secondary level	26 (31.3%)	57 (68.7%)	1.81 (1.01, 3.24)	0.60 (0.26, 1.39)
Diploma and above	19 (31.1%0	42 (68.9%)	1.79 (0.94, 3.43)	0.38 (0.15, 1.00)
Father educational status				
no formal education	23 (14.6%)	134 (85.4%)	1.00	1.00
primary level	21 (27.6%)	55 (72.4%)	2.26 (1.14, 4.35)	2.14 (1.04, 4.42)*
secondary level	25 (31.6%)	54 (68.4%)	2.69 (1.41, 5.160	2.14 (1.07,4.26)
diploma and above	37 (34.3%)	71 (65.7%)	3.04 (1.68, 5.50)	2.58 (1.33, 5.00)
Father occupation				
Government employee	35(30.7%)	79 (69.3%)	1.00	1.00
Private employee	20 (30.8%)	45 (69.2%)	1.00 (0.52, 1.94)	1.81 (0.76, 4.31)
Merchant	26 (36.6%)	45 (63.4%)	1.30 (0.69, 2.44)	1.89 (0.81, 4.48)
Daily laborer	7 (9.7%)	65 (90.3%)	0.24 (0.10, 0.58)	0.78 (0.25, 2.46)
Student	1 (16.7%)	5 (83.3%)	0.45 (0.5, 4.00)	0.92 (0.09, 9.23)
Farmer	12 (21.4%)	44(78.6%)	0.62 (0.29, 1.31)	1.67 (0.54,5.14)
Driver	5 (13.9%)	31 (86.1%)	0.36 (0.13, 1.02)	0.57 (0.18, 1.84)

Family size				
3 and below	30 (22.7%)	102 (77.3%)	1.00	1.00
4-5	61 (31.0%)	136 (69.0%)	1.52 (0.92, 2.53)	1.12 (0.64, 1.98)
6 and above	15 (16.5%)	76 (83.5%)	0.67 (0.34, 1.330	0.49 (0.23, 1.04)
Residence				
Urban	87 (27.2%)	233 (72.8%)	1.00	1.00
Rural	19 (19.0%)	81 (81.0%)	0.63 (0.36, 1.09)	0.85 (0.37, 1.95)
Child age				
6-8	11 (12.7%)	79 (87.8%)	1.00	1.00
9-11	27 (22.1%)	95 (77.9%)	2.04 (0.95, 4.37)	2.26 (1.09, 5.08)*
12-18	68 (32.7%)	140 (67.3%)	3.49 (1.74, 6.98)	3.69 (1.76, 7.75
Planned pregnancy				
Yes	76 (30.3%)	175 (69.7%)	1.00	1.00
No	30 (17.8%)	139 (82.2%)	0.49 (0.31, 0.80)	1.07 (0.55, 2.07)
ANC follow ups				
Not at all	13 (15.5%)	71 (84.5%)	1.00	1.00
1-3 times	51 (22.9%)	172 (77.1%)	1.62 (0.83, 3.16)	0.94 (0.43,2.07)
4 and above	42 (37.2%0	71 (62.8%)	3.23 (1.59, 6.530	1.33 (0.56, 3.14)
Mother follows PMTCT				
Yes	103 (26.8%)	281 (73.2%)	1.00	1.00
No	3 (8.3%)	33 (91.7%)	4.03 (1.21, 13.43)	0.31 (0.87, 1.13)
Mother HIV status disclosure				
Yes	77 (30.4%)	176 (69.6%)	2.08(1.29, 3.370)	1.98 (1.18, 3.32)*
No	29 (17.4%)	138 (82.6%)	1.00	1.00
Exposure to media				
Unsatisfactory	23 (19.2%)	97 (80.8%)	0.62 (0.37, 1.04)	1.28 (0.64, 2.53)
Satisfactory	83 (27.7%)	217 (72.3%)	1.00	1.00
Child currently Breast feed				
Yes	59 (22.3%)	206 (77.7%)	1.00	1.00

No	47 (30.3%)	108 (69.7%)	1.52 (0.97, 2.38)	0.92 (0.52, 1.61)
Wealth index				
Rich	51(35.4%)	93 (64.6%)	3.12 (1.75, 5.53)	2.52 (1.33, 4.77)*
Middle	34 (25.0%)	102 (75.0%)	1.89 (1.03, 3.46)	1.42 (0.73, 2.75)
Poor	21 (15.0%)	119 (85.0%)	1.00	1.00
Household food security				
Food secure	53 (30.3%)	122(69.7%)	1.00	1.00
Mild insecure	19 (30.2%)	44 (69.8%)	0.99 (0.53, 1.86)	1.33 (0.63, 2.80)
Moderate insecure	19 (26.8%)	52 (73.2%)	0.34 (0.45, 1.58)	1.02 (0.48, 2.13)
Sever insecure	15 (13.5%)	96 (86.5%	0.36 (0.19, 0.68)	0.61 (0.27, 1.39)
Food prohibition				
Yes	45 (29.6%)	107(70.4%)	1.43 (0.91, 2.24)	1.22 (0.74, 2.04)
No	61 (22.8%)	207 (77.2%)	1.00	1.00

*significant at p-value <0.05

AOR=adjusted odd ratio, COR-crude odd ratio, CI –confidence interval

6. Discussion

This study demonstrates optimal complementary feeding practices that contain four WHO indictors amongst HIV-exposed children in PMTCT sites were 25.2%. Child age, father educational status, household wealth index, and mother HIV status disclosure were significantly associated with optimal complementary feeding of HIV exposed children.

The finding in this study was higher than other local studies in Ethiopia; Mekelle (10.75%0) (32), Debere Markos (15%) (41), Arsi Negele (9.5%) (42). This discrepancy might be due to the present study was conducted in institutions but the previous studies were community based. Mothers visiting health institution have access to get nutrition education about child feeding and complementary food preparation.

The finding was also higher than the study done in Kenya (15.4 %) (43). It might be because Kenya's study was conducted in slum areas, slum areas are characterized by poor environmental hygiene and highly dense population. so mothers in this area may not prepare and feed the child appropriately. The difference may be also explained by the fact that mothers couldn't afford to buy foods due to lower income and high food price.

But the result of this study was lower than the result from Lasta District, Amhara Region (56.5%) (44). This is probably due to outcome measurement difference. The Lasta's study only used three WHO feeding indicators, whereas the current study used four of the indicators. In addition, compared to the current study, lasta's study indicate that PNC follow up, and exposure to media had significant association with child feeding, which are very important factors to increase the understanding of mother's child feeding practice (28).

The present research has also found child age to be predictor variable as older children 9–11 months and 12-18 months are more likely to feed appropriately compared with younger children 6–8 months. Similarly, studies conducted in Uganda, Nigeria and southern Ethiopia reported child age as a predictor variable [43, 44, 40]. This could be

due to 6-8 months is teething time that may cause fever, diarrhea and lose of appetites (45). As children are getting old consumption of different solid foods also increase.

Children whom fathers' had diploma and above educational status were more likely to be provided with optimal feeding than those from illiterate fathers'. this finding is supported by finding from eleven West African countries (46) and Harar eastern Ethiopia (30), this may be because if fathers are educated they can have jobs and income. Fathers are the primary source of income in the household to purchase necessary foods. Education improves father's knowledge and decision making about HIV exposure and child feeding practice.

Children from rich families were more likely to be feed with optimal complementary foods when compared with those from poor. which is consistent with study in Sidam Southern Ethiopia (19), Debre Markos Northern Ethiopia (41), Tanzania (47).This may be because of rich families have the power to purchase different kinds of foods this will increase the ability of the family to feed their children with adequate amount and frequency of foods.

Mothers who disclose their HIV status fed their child more than those not disclosed. This finding is similar with the study in Kenya (48) and Tanzania (49).It may be because as the mothers disclose their status they can to get assistance and information from family members, they can also get support and aids from health workers and different associations to feed their child freely with the optimal foods.

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7. Limitation of the study

The study did not consider the quantity and quality of food consumed by the children. Since we sampled only five hospitals it may not be representative of the whole region. The study may not be free from social desirability bias.

8. Conclusion

This study showed that optimal complementary feeding of HIV exposed children was low as measured by four WHO indicators.

Parental wealth status, children age, mother's disclosure of her HIV status and father's educational status were found to be significantly associated with optimal complementary feeding of HIV exposed infants and young children.

9. Recommendation

- ✓ Education sectors needs to strengthen adult learning programs.
- ✓ Governmental and nongovernmental Intervention activities should target poorer household by introducing income-generating opportunities.
- ✓ Health care providers need to counsel, support and promote HIV positive mothers to disclose their HIV status.
- ✓ Health workers had to give special emphasis on educating mothers and caregivers about feeding of a child different available food groups with adequate frequency that increases as the child age increases.
- ✓ In most of the cases one or two of the indicators are reported as the only important indicator of complementary feeding, though the fact showed the presence of quite significant difference. So policy makers, programmers and researchers should put this into account and strength intervention activities based on it.

10. References

1. UNICEF. For every child end AIDS Seventh Stocktaking Report. 2016.
2. Alemtsehai Alemu, Tsegazeab Bezabih, Programme UNWF. The impacts of HIV/AIDS on livelihoods and food security in rural Ethiopia: Results from household survey in four regions. researcchgate. 2008.
3. Priya Gogia, Ravi Ambey, Sahu S. Assessment of nutritional status and the variables affecting the nutritional status of human immunodeficiency virus positive children in antiretroviral therapy centre of J. A. group of hospitals, Gajra Raja medical college, Gwalior, Madhya Pradesh, India. International Journal of Contemporary Pediatrics. 2016;3(4).
4. Murugi Ndirangu JOW, Sonia Ehrlich Sachs, Peninah Masibo,, Deckelbaum aRJ. Nutritional status of under-five children in HIV-affected households in western Kenya. Food and Nutrition Bulletin. 2011;32.
5. UNAIDS. progress report on the global plan towards the elimination of new HIV infections among children by 2015 and keeping their mothers alive. 2014.
6. Roger L, Shapiro, Shahin Lockman, Soyeon Kim, Laura Smeaton, T. J, et al. Infant Morbidity, Mortality, and Breast Milk Immunologic Profiles among Breast-Feeding HIV-Infected and HIV-Uninfected Women in Botswana. journal of infectious disease 2007.
7. KartikK., Venkatesh, Guy de Bruyn, Edmore Marinda, Kennedy Otwombe, Ronelle van Niekerk, et al. Morbidity and Mortality among Infants Born to HIV-Infected Women in South Africa Implications for Child Health in Resource-Limited Settings. journal of tropical pediatrics. 2011;57.
8. Elizabeth W Kimani-Murage1, Shane A Norris3, John M Pettifor3, Stephen M Tollman1,4,5, Kerstin Klipstein-Grobusch6, Xavier F Gómez-Olivé1, David B Dunger7 and Kathleen Kahn1. Nutritional status and HIV in rural South African children. BMC 2011.
9. Divala OM, Charles1 and Ngwira, Bagrey2. Morbidity and mortality in HIV-exposed under-five children in a rural Malawi setting. journal of international AIDS society. 2014.
10. 10. WHO. world health statistics. Avenue Appia,Geneva World Health Organization; 2014.
11. Federal, Democratic, Republic, Ethiopia o. Ethiopia Demographic and Health Survey key indicators. Central Statistical Agency, Addis Ababa, Ethiopia, The DHS Program,ICF, Rockville, Maryland, USA. addis ababa: 2016.
12. LANCET T. The Lancet's Series on Maternal and Child Undernutrition Executive Summary. 2005.
13. Hipgrave DB, Fu X, Zhou H, Jin Y, Wang X, Chang S, et al. Poor complementary feeding practices and high anaemia prevalence among infants and young children in rural central and western China. European journal of clinical nutrition. 2014;68(8):916-24.
14. CM McDonald, R Kupka, KP Manji, J Okuma, RJ Bosch, S Aboud, et al. Predictors of stunting, wasting and underweight among Tanzanian children born to HIV-infected women. European journal of clinical nutrition. 2012.
15. Mugwaneza P, Umutoni NW, Ruton H, Rukundo A, Lyambabaje A, Bizimana Jde D, et al. Under-two child mortality according to maternal HIV status in Rwanda: assessing outcomes within the National PMTCT Program. The Pan African medical journal. 2011;9:37.
16. Pili Kamenju, Enju Liu, Ellen Hertzmark, Donna Spiegelman, Rodrick Kisenge, Roland Kupka, et al. Nutritional status and complementary feeding among HIV-exposed infants: A prospective cohort study. Maternal and Child Nutrition. 2016.

17. world, health, organization. guideline Updates on HIV and infant feeding Geneva, Switzerland2016.
18. UNICEF. Infant and young child feeding programming guide nutrition section, programmes, UNICEF New York2011.
19. Haile D, Belachew T, Berhanu G, Setegn T, Biadgilign S. Complementary feeding practices and associated factors among HIV positive mothers in Southern Ethiopia. Journal of health, population, and nutrition. 2015;34:5.
20. J Orne-Gliemann, T Mukotekwa, A Miller, F Perez, M Glenshaw, P Nesara, et al. Community-based assessment of infant feeding practices within a programme for prevention of mother-to-child HIV transmission in rural Zimbabwe. Public Health Nutr. 2005.
21. Renaud Becquet, Valeriane Leroy, Didier Ekouevi, Ida Viho, Katia Castetbon, Patricia Fassinou, et al. Complementary feeding adequacy in relation to nutritional status among early weaned breastfedchildren who are born to HIV-infected mothers ANRS 1201/1202 Ditrame Plus, Abidjan, Cote d'Ivoire. In: Institut de Santé Publique Epidémiologie Développement, Sanitaire. IdV, editors. HIV, early weaning and complementary feeding adequacy2006.
22. Disha , Rawat, Subandoro, Menon aP. infant and young child feeding practices in ethiopia and zambia and their association with child nutrition analysis of demographic and survey. african scholarity science communications trust. 2012;12.
23. Alive, Thrive. Factors associated with infant and young child feeding practices in Amhara region and nationally in Ethiopia analysis of ethiopia demographic and health survey 2005 and 20112015.
24. Elias Bekele Wakwoya, Tatek Abate Zewudie, Gebresilasie KZ. Infant feeding practice and associated factors among HIV positive mothers in Debre Markos Referral Hospital East Gojam zone, North West Ethiopia The Pan African medical journal. 2016.
25. Dagnachew Muluye, Desalegn Woldeyohannes, Gizachew M, Tiruneh aM. Infant feeding practice and associated factors of HIV positive mothers attending prevention of mother to child transmission and antiretroviral therapy clinics in Gondar Town health institutions, Northwest Ethiopia BMC Public Health. 2012.
26. Young SL, Israel-Ballard KA, Dantzer EA, Ngonyani MM, Nyambo MT, Ash DM, et al. Infant feeding practices among HIV-positive women in Dar es Salaam, Tanzania, indicate a need for more intensive infant feeding counselling. Public Health Nutr. 2010.
27. Bukusuba J, Kikafunda JK, Whitehead aR. nutritional status of children(6-59months) among HIV postive mothers caregivers living in urban seeting of uganda. AJFUND ONLINE. 2009;9.
28. Saidur Rahman Mashreky, Fazlur Rahman, Aminur Rahman, Abu Talab, Rahman Z. Role of mass media in increasing knowledge and practices of mothers on IYCF: Findings from a community trial in rural Bangladesh. South East Asia Journal Of Public Health. 2015.
29. A, Shemdoe, et al. Breastfeeding and Complementary Feeding Practices among HIV-Exposed Infants in Coastal Tanzania. Jornal of human lactation. 2015;32.
30. Agumasie Semahegn, Gezahegn Tesfaye, Bogale A. Complementary feeding practice of mothers and associated factors in Hiwot Fana Specialized Hospital, Eastern Ethiopia. Pan African Medical Journal. 2014.
31. melekamu Beyene AGw, molla mesele wassie. ditary diversity and meal frequency practice among infants and young children age 6-23 months in ethiopia. BMC Public Health. 2015.
32. Ergib Mekbib, Ashenafi Shumey, Semaw Ferede, Haile F. Magnitude and factors associated with appropriate complementary feeding among mothers having children 6-23. Journal of Food and Nutrition Sciences. 2014;2.

33. Goga AE, Doherty T, Jackson DJ, Sanders D, Colvin M, Chopra M, et al. Infant feeding practices at routine PMTCT sites, South Africa: results of a prospective observational study amongst HIV exposed and unexposed infants-birth to 9 months. International breastfeeding journal. 2012;7(1):4.
34. Marinelli KA, Gill SL, Williams AM, Chantry C, Geubbels EL, Ramaiya AK, et al. Breastfeeding and complementary feeding practices among HIV-exposed infants in coastal Tanzania. Journal of Human Lactation. 2016;32(1):112-22.
35. Wapang'ana GN. Assessment of factors influencing infant feeding practices among HIV positive mothers in Rongo District, Western Kenya. 2013.
36. Girma Y. Infant Feeding Practice and Associated Factors among HIV Positive Mothers Enrolled in Governmental Health Facilities in Mekelle Town, Tigray Region, North Ethiopia. Journal of HIV/AIDS and Infectious Diseases. 2014.
37. 37. NJERI ML. Factors influencing exclusive breastfeeding among infants less than 6 months in Kasarani informal settlement, Molo District, Kenya: KENYATTA UNIVERSITY; 2012.
38. federal democratic republic of Ethiopia ministryof health. Health and health related indicator, EFY 2007. Ethiopia 2008.
39. World, Health, Organization. Indicators for assessing infant and young child feeding practices 2008.
40. Jennifer Coates Anne Swindale Paula Bilinsky. household food insecurity access scale (HFIAS) for measurement of food accessIndicator guide food and nutrition technical assistance project (FANTA),2007.
41. Belete Y, Awraris W, M aM. Appropriate Complementary Feeding Practice Was Relatively Low and Associated with Mother's Education, Family Income, And Mother's Age: A Community Based Cross-Sectional Study in Northern Ethiopia. Journal of Nutritional Health & Food Engineering. 2017;6(2-2017):7.
42. Tigist Kassa, Berhan Meshesha, Yusuf Haji, Ebrahim aJ. Appropriate complementary feeding practices and associated factors among mothers of children age 6–23 months in Southern Ethiopia,2015. BMC Pediatrics. 2016;16:10.
43. 43. korir Jk. determinants of complementary feeding practice and nutritional status of children 6-23 months old in korogocho slum, Nairobi country kenya: kenyatta university; 2013.
44. Menberu Molla, Tadese Ejigua, Nega G. Complementary Feeding Practice Associated factors among mothers having children 6–23 months of Age,Lasta District, Amhara Region, Northeast Ethiopia. Hindawi advances in Public Health. 2017:8.
45. Annetta KL Tsang, The University of Queensland, Dentistry So. Teething, teething pain and teething remedies. International dentistry.12:12.
46. Issaka AI. Complementary feeding practices in West Africa: Statistics, epidemiology and policy implications: University of Western Sydney.
47. Victor R, Baines SK, Agho KE, Dibley MJ. Factors associated with inappropriate complementary feeding practices among children aged 6-23 months in Tanzania. Maternal & child nutrition. 2014;10(4):545-61.
48. Maricianah A Onono, Craig R Cohen, Mable Jerop, Elizabeth A Bukusi, Turan JM. HIV serostatus and disclosure: implications for infant feeding practice in rural south Nyanza, Kenya. BMC Public Health. 2014:9.
49. Anne M. Williams, Caroline Chantry, Eveline L. Geubbels, Astha K. Ramaiya, Aloisia I. Shemdoe3, Daniel J. Tancredi, et al. Breastfeeding and complementary feeding practices among HIV-exposed infants in Coastal Tanzania. Journal of Human Lactation. 2016;32.

11. Annex

11.1 Information sheet and consent form

Title of the research project: optimal complementary feeding practice and associated factors among HIV exposed infant and young children aged 6-18months in selected amhara region hospitals, Northwest Ethiopia, 2017.

Principal Investigator: Frizer Esubalew

Advisors: 1.Mrs. Azeb Atenafu (Assistant professor)

2. Mr. Zegeye Abebe (MSc)

Name of the organization: University of Gondar, Collage of Medicine and Health Sciences, Institute of Public Health, Department of human nutrition.

Sponsor: self sponsor

Information sheet and consent form prepared for persons who are going to participate in this research project.

Introduction: My name is Frizer Esubalew I am a student at University of Gondar for masters' degree. I am conducting a research on HIV exposed children 6-18 months of age as part of my study course. Right now I am going to give you the relevant information concerning my research and Invite you to be part of this research. Before you decide to be part of the research you can talk to anyone to feel comfortable with the research. If there is any word that you do not understand while I am giving the information, please stop and I will explain it to you.

Purpose of the Research project: This research is to determine how many infants and young children properly receive complementary foods. Many literatures in various parts of the world state that optimal complementary feeding practices are not always good and various factors influence this practice; therefore this study tries to identify those factors influencing optimal complementary feeding practices and associated factor for solution to the problem.

Procedure: This study involves HIV exposed 6-18 month aged infants and young children. You are randomly selected to be one of the study participants if you are willing to take part in this study and we kindly invite you to take part in our project. If you are willing to participate, we are so happy and we need you to clearly understand the aim of this study and to sign the consent form. Finally you are kindly requested to give your genuine response in the interview questionnaire. You do not need to tell your name to the data collector and all your responses and the results obtained will be kept confidentially by using coding system whereby no one will have access to your responses.

Benefits: By participating in this research project you may feel some discomfort in wasting your time (maximum of 30 minutes) .However, your participation is definitely important to identify optimal complementary feeding practices and associated factors so as to design appropriate strategy and intervention that enhance proper complementary feeding?

The result will be disseminated to University of Gondar College of Medicine and Health Science, Institute of Public health, Amhara regional health bureau, Gondar university hospital health office and interested partners.

Risk and /or Discomfort: There is no risk or direct benefit in participating in this research project.

Incentives/Payments for Participating: You will not be provided any incentives or payment to take part in this project.

Confidentiality: The information collected from you will be kept confidential and stored in a file, without your name by assigning a code number to it. And it will not be revealed to anyone except the principal investigator and will be kept locked with key

Right to Refusal or Withdraw: Participating and not participation is your full right and you can stop participating in the study at any time. You can also skip any question which you want not to respond. You can ask any question which is not clear for you.

Person to contact: This research project will be reviewed and approved by the ethical committee of the University of Gondar. If you have any question you can contact any of the following individuals and you may ask at any time you want.

A) Frizer Esubalew Geberie

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Consent form

Department of Human nutrition institute of public health, Collage of Medicine and Health Science, University of Gondar study questionnaire on optimal complementary feeding practice and associated factors among HIV exposed infants and young children aged 6-18 months in amhara region hospitals, Northwest Ethiopia, 2017

How are you? Dear madam/sir good morning /good afternoon

My name is ----------, I am working as data collector and investigator in research project, which is conducted by University of Gondar. We are interviewing individual's mothers who have HIV exposed 6-18 month age children on optimal complementary feeding practice and associated factors. I am going to ask you some questions that are not difficult to answer. Yours and child's name will not be written in this form and will never be used connection with any information you tell us. All information given by you kept confidential. Your participation is voluntary and you are not obligate to answer any question which you do not wish to answer. If fill discomfort with this, please fill free to drop it any time you want .This will be take about 30 minutes. Could I have your permission to continue?

1. Yes, (if say yes, thanks and continue with her)
2. No, (if say no, thanks and skip her)

Data collector's name_____signature_____date_____

Supervisor's name_____signature_____date_____

11.2 English version questionnaires

University of Gondar College of Medicine and Health Science, Institute of Public Health Structured questionnaire on optimal complementary feeding practice and associated factors of HIV exposed children aged 6-18 months in amhara region hospitals, Northwest Ethiopia, 2017.

Questionnaire ID: _____ Kebele: ----------

No	Questions	Response	Skip
001	Questionnaire code		
002	Site in which interview is being conducted		
003	Interviewer Name		
004	Checked by supervisor	Signature-_____date_____	

Part 1, parental socio demographic and economic related factors		
101	How old are you(mother)?	_____yr
102	What is your marital status?	1. married 2. single 3. divorced 4. widowed 5. separated
103	What is your educational level?	1. Unable to read & write 2. read and write 3. primary level(1-8) 4. secondary level(9-12) 5. college diploma 6. university degree
104	What is your husband educational status?	1. unable to read & write 2. read and write 3. primary level(1-8) 4. secondary level(9-12) 5. college diploma 6. university degree
105	What is your occupation (mother)?	1. House wife 2. Government employee 3. Private organization 4. Merchant 5. daily laborer 6. farmer 7. student 8. Other……..

106	What is your husband occupation	1. government employee 2. private organization 3. merchant 4. daily laborer 5. Farmer 6. student 7. others(specify)__
107	Where is your residence?	1. Urban 2. Rural
108	How many people are living in your household?	----------
109	How many less than five years old children you have?	----------
110	Do you have home gardening?	1. Yes 2. No
111	What is the purpose of home gardening?	1. For consumption 2. For both selling and consumption 3. For selling
112	In which activities you participate for decision making?	1. About feeding practice 2. About our income 3. About family planning 4. Don't participate 5. Other
Part2:child characteristics		
201	What is the Sex of the child?	1. Male 2. Female
202	What is Age of the child?	_____months
203	What is your child birth order?	----------th
204	What was your child's gestational age?	1. Below 9 month 2. At 9 month 3. Above 9 month
205	Is there any prohibited food for the infant in your community?	1. Yes 2. No
PART 3: Health care service and information		
301	Was your pregnancy planned?	1. Yes 2. No
302	Number of ANC visits?	1. Once 2. 2 times 3. 3 times 4. 4 and above times 5. Not at all
303	What kind of information you get during your visits (ANC)?	1. About BF 2. About CF 3. About immunization 4. About sun light 5. Other
304	Where did you give birth to this child?	1. Home 2. Institution

305	Who was your birth attendant?	1. Health worker 2. Traditional birth attendant
306	By what mechanism you delivered.	1. SVD 2. CS
307	After delivery, did you get PNC at health institution?	1. Yes 2,No
308	Did you receive advice /information on infant feeding at PNC?	1. Yes 2,No
309	When did you find out your HIV status?	1. Before Pregnancy 2. During Pregnancy 3. During Delivery 4. After delivery
310	Who else knows about your HIV positive status?	1. Husband 2. Members of family 3. friends 4. health workers 5. other
311	Are you on ART?	1. Yes 2. No
312	What kind of information you get on ART?	1. About child feeding 2. About immunization 3. About sun light 4. About medications 5. Other
313	Have you attended PMTCT service	1. Yes 2. No
314	Did you receive advice /information on infant feeding on PMTCT?	1. Yes 2. No
315	Where do you get information about infant feeding practice?	1. from health workers 2. from friends 3. from family 4. from media 5. others(specify)___ 6. have no information
316	For how many times you watch television within a week?	1. not at all 2. less than once a week 3. more than once a week
317	For how many times you listen a radio within a week?	1. not at all 2. less than once a week 3. more than once a week
Part 4: Feeding practices assessment		
401	Is the child currently breast fed?	1. Yes 2. No
402	When did you start breast feeding?	1. Immediately 2. Within ----------hrs 3. Within ----------days
403	If not bf when did you stop?	1. Not give at all 2. Before 6month 3. At 6month 4. After6month
404	Did you started to feed complementary food for your child?	1. Yes 2. No
405	At what age did you first introduce complementary food (solid, semisolid and soft fluid) other than	_____months

	breast milk to the baby?	
406	How many times did you feed (name) solid or semi solid food from yesterday morning to today morning? If the response is not numeric probe for a numeric response	1. Number_____ 2. Don't know 3. when wanted

Please tell me everything that your child ate over the past 24 hrs from sunrise yesterday to sunrise today (whether at home or outside the home). Think about when first wake up yesterday. Did eat anything at that time? What did you after that? Did eat anything at that time? If yes, ask: please tell me everything ate at that time. Probe anything else? Until respondent says nothing else. If respondent mentions mixed dishes like a sauce or stew, probe: what ingredient were in that dish? Anything else? Until respondent says' nothing else '.repeat questions above until respondent says the child went to sleep until the next day. If at least one food from the food group has been given in the past 24 hours circle **1** in the column below .if no food in a food group has given **2**.if the respondent doesn't know circle **3.**

	Food types	**At least once**	**No**	**Doesn't know**
407	Injera, bread, rice, noodles, porridge, atemit other foods made from grains, such as teff, maize, barley, wheat, sorghum, Millet	1,yes	2,no	3,don't know
408	Pumpkin, carrots, sweet potatoes that are yellow /orange inside	1,yes	2,no	3,don't know
409	Potatoes, beetroot or any other foods made from roots	1,yes	2,no	3,don't know
410	Any foods made from beans, peas, lentils nor nuts	1,yes	2,no	3,don't know
411	Any dark green leafy vegetables? Like cabbage leaves?	1,yes	2,no	3,don't know
412	Ripe mangoes, ripe papayas	1,yes	2,no	3,don't know
413	Any other fruit or vegetables(banana, avocado, lemon, apple, pineapple	1,yes	2,no	3,don't know
414	Liver, kidney, heart or organ meat	1,yes	2,no	3,don't know
415	Any meat such as beef, pork, lamp, goat, chicken or duck	1,yes	2,no	3,don't know
416	Fresh or dried, shellfish, or seafood	1,yes	2,no	3,don't know
417	Eggs	1,yes	2,no	3,don't know
418	Cheese, yogurt, or other milk products	1,yes	2,no	3,don't know
419	Any oil, fats or butter, or food made with any of these?	1,yes	2,no	3,don't know
420	Any sugar foods such as chocolates, sweets, candies, pastries, cakes or biscuits?	1,yes	2,no	3,don't know
421	Condiments for flavor such as chilles, spices, herbs?	1,yes	2,no	3.i don't know
422	Other foods :please write down other foods in this box that the respondent mentioned but are not in the list above			

Now I would like you to ask you number of foods you fed to your child during last 24 hrs

423	How many times did your child eat solid, semisolid,	_____times

	or soft foods other than milk yesterday during the day or night time?	
424	How many times yesterday during the day or night did drink milk products if he drunk a milk?	_____times
Part 6: Household food security related factors		
601	In the past four weeks, did you worry that your household would not have enough food?	0. No 1. Yes
	If yes how often it happens?	1. rarely (one or two time) 2. sometimes(3-10 times) 3. often(>10 times)
602	In the past four weeks, were you or any household member not able to eat the kinds of foods you preferred because of a lack of resources?	0. No 1. Yes
	If yes how often it happens?	1. rarely (one or two time) 2. sometimes(3-10 times) 3. often(>10 times)
603	In the past four weeks, did you or any household member have to eat a limited variety of foods due to a lack of resources?	0. No 1. Yes
	If yes how often it happens?	1. rarely (one or two time) 2. sometimes(3-10 times) 3. often(>10 times)
604	In the past four weeks, did you or any household member have to eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food?	0. No 1. yes
	If yes, how often?	1. rarely (one or two time) 2. sometimes(3-10 times) 3. often(>10times)
605	In the past four weeks, did you or any household member have to eat a smaller meal than you felt you needed because there was not enough food?	0. No 1. Yes
	If yes, how often?	1. rarely (one or twotime) 2. sometimes(3-10times) 3. often(>10times)
606	In the past four weeks, did you or any household member have to eat fewer meals in a day because there was not enough food?	0. No 1. Yes
	If yes, how often?	1. rarely (one or twotime) 2. sometimes(3-10times) 3. often(>10times)
607	In the past four weeks, did you or any household member go a whole day and night without eating anything because there was not enough food?	0. No 1. Yes

	If yes, how often?	1. rarely (one or twotime) 2. sometimes(3-10times) 3. often(>10times)
608	In the past four weeks, was there ever no food to eat of any kind in your household because of lack of resources to get food?	0. No 1. Yes
	If yes, how often?	1. rarely (one or twotime) 2. sometimes(3-10times) 3. often(>10times)
609	In the past four weeks, did you or any household member go to sleep at night hungry because there was not enough food?	0. No 1. Yes
	If yes, how often?	1. rarely (one or twotime) 2. sometimes(3-10times) 3. often(>10times)

Part 5 : household wealth status related questions		
501	Do have bank account from family member?	1. Yes 2. No
502	Does the house hold own any livestock, herds and others farm animal or poultry?	
	Cows/bulls/oxen	1. Yes 2. no
	Horses/donkeys/mules?	1. Yes 2. no
	Goats?	1. Yes 2. no
	Sheep?	1. Yes 2. no
	Chickens?	1. Yes 2. no
503	Does your house hold have?	
	Electricity?	1. Yes 2. no
	Watch/clock?	1. Yes 2. no
	Radio?	1. Yes 2. no
	Television?	1. Yes 2. no
	Mobile telephone?	1. Yes 2. no
	Refrigerator?	1. Yes 2. no
	Table? Chair?	1. Yes 2. no
	Bed with cotton/sponge/spring maters?	1. Yes 2. no
	Kerosene lamp/pressure lamp?	1. Yes 2. no
504	What is main Roofing material?	1.Corrugated iron sheet 2.Thatch or grass 3.Wood and mud 4.Mud and stone 5.Reed and bamboo 6.Other

505	Floor material	1.Earth 2.Cow dung 3.Cement 4.ceramic 5.Other
506	Wall material	1.Wood and mud 2. bamboo 3.Stone and mud 4.Stone & cement 5.Other (specify)
507	Do you have of cultivated land?	1.yes 2.no
508	If yes from 412 Size of cultivated land in timad?	1.Less than one timad 2.1-2.99 timad 3.3-4.99 timad 4.5-6.99 timad 5.7-9.99 timad 6.10 and more timad
509	Food source of house hold?	1.Own production 2.Purchase 3.Food aid/donation 4.Shared production 5.Others

11.3 የመረጃ እና የፈቃደኛነት መጠየቂያ ቅፅ

<u>የምርምሩ/ፕሮጀክት ርእስ</u>: በአማራ ክልል ባሉ ሆስፒታሎች ውስጥ በሚኖሩ ከ6-18 ወር እድሜ ያላቸዉ ለኤች.አይ. ቪ. የተጋለጡ ህጻናት ልጆች ተጨማሪ ምግብ በቀን ስንት ጊዜ እና በምን ያህል ስብጥር እንደ ሚመግቡ እና ተያያዥነት ያላቸዉ ጉዳዮች የዳሰሳ ጥናት፡፡

የዋናተመራማሪውስም፡ ፍሬዘር እሱባለዉ

የድርጅቱ ስም: በጎንደር ዩንቨርስቲ ህክምና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ተቋም.

ፕሮጀክቱን የሚሸፍነውአካል ፡በግል

መግቢያ : ፍሬዘር እሱባለዉ እባላለሁ በጎንደር ዩንቨርስቲ ህክምና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ የሁለተኛ ድግሪ ተማሪ ስሆን እርስዎን የመረጥነዉ በአጣ ሲሆን በአማራ ክልል ሆስፒታሎች ዉስጥ 6-18 ወር እድሜ ያላቸዉ ለኤች.ኤይ.ቪ. የተጋልጡ ልጆችተጨማሪ ምግብ በቀን ስንት ጊዜ እና በምን ያህል ስብጥር እንደ ሚመግቡ እና ተያያዥነት ያላቸዉ ጉዳዮች የዳሰሳ ጥናት ተሳታፍ እንዲሆኑ ጋብዘነወታል፡፡ለምናጠናዉ ጥናት የተወሰኑ ጥያቄዎችን እንጠይቀወታለን፡፡የእርስዎ መልስ ለጥናታችን በጣም ጠቃሚ ነዉ፡፡ጥያቄዎችን በመመለስ ለሚያደርጉት ትብብር በጣም እናመሰግናለን፡፡

ጥቅም፡በዚህ ምርምር በመሳተፍ እርስዎም ሆኑ ልጅዎ የተለየ ጥቅም አታገኙም፡፡ነገር ግን የእርስዎ ተሳትፎ በሆስፒታል ዉስጥ በሚገኙ ህጻናት አመጋገብ ተግባር እና ተያያዥ ጉዳዮች አዉቆ ወደ ፊት የመፍትሄ ሃሳብ ለመጠቆም እና ዉሳኔ ለመስጠት ይጠቅማል፡፡

ሊገጥሙ የሚችል ችግሮች ወይም አለመመቸት: እስከ 20-30 ደቂቃ የሚደርስ የሰአት ብክነት በስተቀር በዚህ ጥናት በመሳተፍ የሚደርስብዎ ችግር የለም፡፡

ሚስጥራዊት: በዚህ ምርምር የተሰበሰበ መረጃ ሚስጥራዊ ይሆናል፡፡በዚህ ቅጽም የእርስዎ ስም አይጻፍበትም፡፡

ያለመሳተፍ ወይም የማቋረጥ መብት: በዘህ ጥናት ያለመሳተፍ ፍጹም የሆነ መብት አለዎት፡፡መመለስ የማይፈልጉትን ማንኛዉም ጥያቄ ካለ አይገደዱም፡፡ በተጨማሪም በማንኛዉም ስኣት የማቋረጥ ፍላጎትዎ የተጠበቀ ነዉ፡፡

ሊያገኟቸዉ የሚችሉ ሰዎች: ይህ ምርምር በጎንደር ዩንቨርስቲ የስነ ምግባር ኮሚቴ ተከልሶ የሚጸድቅ ይሆናል፡፡የበለጠ መረጃ ማግኘት የሚፈልጉ ከሆነ ኮሚቴዉን በሚከተሉት አድራሻዎች ማግኘት ይችላሉ፡፡የትኛዉንም አይነት ጥያቄ ቢኖርም ከዚህ ቀጥሎ የተጠቀሱትን ግለሰቦች ማግኘትና በማንኛዉም ጊዜ መጠየቅ ይችላሉ፡፡

ወ/ሮ አዜብ አጥናፉ: በጎንደር ዩንቨርስቲ የህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ኢንስቲትዩት፡የጥናት አማካሪ

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የፈቃደኝነት መጠየቂያ ቅጽ

በጎንደር ዩንቨርስቲ የህክምናና ጤና ሳይንስ ኮሌጅ የህብረተስብ ጤና አጠባበቅ ተቋም ከ6-18 ወር ባሉ ለኤች.አይ.ቪ የተጋለጡ ህጻናት ተጨማሪ ምግብ አመጋገብ ዙሪያ የተዘጋጀ መጠይቅ

መግቢያ፡-ስላም እንደምን አሉ?

ስሜ----------እባላለሁ፡፡ ወደ እርስዎ የመጣሁት የአመጋገብ ልምድና ተያያዥነት ያላቸዉ ጉዳዮች ላይ መረጃ ለመስብሰብ ነዉ፡፡ በጥናቱ የመሳተፍ ወይም ያለመሳተፍ መብትዎ የግል ምርጫዎ ብቻ ይሆናል፡፡

በዚህ ጥናት ተሳተፍም አልተሳተፉም እንደማንኛዉም የማህበረሰብ አባል ከዚህ በፊት ያገኟቸዉ የነበሩ አገልግሎቶች ሆነ ጥቅሞች የማይለወጡ መሆኑን እንዲገነዘቡልን እንወዳለን፡፡ለዚህ ጥናት ተብሎ ከእርስዎ የተገኘ ማንኛዉም መረጃ ሚስጥራዊነት በተጠበቀ ሁኔታ የሚያዝ ይሆናል፡፡በመሆነም ከዋና አጥኝዉ በስተቀር ማንኛዉም ግለሰብ መረጃዉን እንዲያገኘዉ ወይም እንዲመለከተዉ አይፈቀድለትም በዚህ ጥናት በመሳተፍዎ ምክኒያት ለእርስዎ በግል የሚደረግልዎ ወይም የሚሰጥዎት ጥቅማጥቅም አይኖርም፡፡የጥናቱ ዉጤትም በተግባር ላይ ሲዉል ግን ሁሉንም ህጻናት ሊጠቅም የሚችል ስራ ሊሰራ ይችላል፡፡በዚህ ጥናት ምክኒያት ሊደርስብዎ የሚችል ምንም አይነት አደጋ ወይም የጎንዮሽ ጉዳቶች አይኖርም፡፡

እስካሁን በነበረን ቆይታ ይሳተፍበት ዘንድ ስለተጠየቁ ፕሮጀክቶች ወይም ጥናት አስፈላጊ የተባሉትን መረጃዎች በሙሉ ገልጸንለዎታል፡፡በቂ መረጃም እንዳገኙና እንደተረዱት እናምናለን፡፡ምስጥራዎነቱም የተጠበቀ ሲሆን የሚወስደዉ ጊዜ ከ20-30 ደቂቃ በላይ አይፈጅም፡፡

ስላዳመጡን አመሰግናለሁ

በዚህ ጥናት ለመሳተፍ ፈቃደኛነዎትዎ

አዎ ☐ አይደለሁም ☐ (መጠይቁን ያቋርጡ)

የመረጃ ሰብሳቢዉ ስም---------- ፊርማ----------ቀን----------

የተቆጣጣሪዉ(ሱፐርቫዘሩ) ስም----------ፊርማ----------ቀን----------

11.4 የአማርኛ መጠይቅ

በጎንደር ዩንቨርስቲ የህክምናና ጤና ሳይንስ ኮሌጅ የህብረተሰብ ጤና አጠባበቅ ተቋም ከ6-23 ወር ባሉ ለኤች.አይ.ቪ. የተጋለጡ ህጻናት ተጨማሪ ምግብ አመጋገብ ዙሪያ የተዘጋጀ መጠይቅ

ተ.ቁ	መጠየቅ	ምላሽ
001	የመጠየቅ መለያ ቁጥር	
002	መጠይቁን የሰራዉ ሰዉ ስም	
003	መጠይቁ የተካሄበት ቀን	ቀን / ወር / ዓ.ም
004	ያረጋገጠዉ ሱፐርቫይዘር	ፊርማ----------ቀን----------

ክፍል አንድ፡ የወላጆች መሰረታዊ የስነ-ህዝብ ሁኔታ በተመለከተ የተዘጋጁ ጥያቄዎች		
101	የእናትየዋ እድሜ ስንት ነዉ(በሙሉ አመት)?	----------አመት
102	እናት በአሁኑ ወቅት ያሉበት የጋብቻ ሁኔታ ምንድን ነዉ?	1. ያገባችና አብረዉ የሚኖሩ 2. ያገባችና ተለያይተዉየሚኖሩ 3. ያላገባች 4. የፈታች 5. ባል የሞተባት 6. ሌላ ካለ
103	የእናት የትምህርት ደረጃ?	1. ማንበብና መጻፍ የማይችል 2. ማንበብና መጻፍ የሚችል 3. አንደኛ ደረጃ ያጠናቀቀ(1-8) 4. ሁለተኛ ደረጃ ያጠናቀቀ(9-12) 5. ኮሌጅ ዲፕሎማ 6. ዩኒቨርስቲ ዲግሪ
104	የአባት የት/ት ደረጃ?	1. ማንበብና መጻፍ የማይችል 2. ማንበብና መጻፍ የሚችል 3. አንደኛ ደረጃ ያጠናቀቀ(1-8) 4. ሁለተኛ ደረጃ ያጠናቀቀ(9-12) 5. ኮሌጅ ዲፕሎማ 6. ዩኒቨርስቲ ዲግሪ
105	የእናት ስራ ምንድን ነዉ?	1. የመንግስት ሰራተኛ 2. የግል ስራ 3. ነጋዴ 4. የቀን ሰራተኛ 5. የቤት እመቤት 6. ተማሪ 7. ሌላ ካለ ይጥቀሱ---
106	የ(ስም) አባት ስራ ምንድን ነዉ?	1. የመንግስት ሰራተኛ 2. የግል ስራ 3. ነጋዴ 4. የቀን ሰራተኛ 5. ተማሪ 6. ሌላ ካለ ይጥቀሱ
107	የቤተሰብዎ ብዛት ስንት ነዉ? (ቤት ዉስጥ ያለ ሰዉ ሁሉ)	----------
108	ከአምስት አመት በታች ያሉ ህጻናት ብዛት?	----------

109	የመኖሪያ አካባቢዎት የት ነዉ?	1. ከተማ 2. ገጠር
110	የጓሮ አትክልት አለዎት?	1. አለኝ 2. የለኝም
111	አለኝ ከሆነ ለምንድን ነዉ የሚጠቀሙበት?	1. ሁሉንም ለገቢያ 2. ሁሉንም ለቤት ፍጆታ 3. ከፊሉን ለሽያጭ ና ከፊሉ ለቤት ፍጆታ
112	የቤተሰብ ጉዳይ በተመለከተ በሚወሰኑ ዉሳኔዎች እርስዎ በየትኛዉ ይሳተፋሉ?	1. ስለ አመጋገብ 2. ስለ ቤት ወጭና ገቢ 3. ስለ ቤተሰብ ምጣኔ 4. አልሳተፍም 5. ሌላ ካለ--
ክፍል 2፡የልጅ ሁኔታ ዳሰሳ		
201	የህጻኑ/ኗ ጾታ?	1. ወንድ 2.ሴት
202	የህጻኑ/ኗ እድሜ ስንት ነዉ?(በሙሉ ወር)	----------ወራት
203	ህጻኑ/ኗ ስንተኛ ልጅዎት ነዉ/ናት?	----------ኛ
204	ህጻኑ/ኗ በስንተኛ ወር ነዉ የተወለደዉ?	1. ከ9ወር በፊት 2. በ9ወር
ክፍል ሶስት፡የ ጤና አገልግሎት አጠቃቀምና መረጃን የሚዳስሱ ጥያቄዎች		
301	ህጻኑ/ኗን ያረገዙት አቅደዉ ነዉ?	1. አወ 2. አይደለም
302	በህጻኑ/ኗ እርግዝናዎት ወቅት ለስንት ጊዜ ወደ ጤና ድርጅት በመሄድ የእርግዝና ቅድመወሊድ ክተትል አድርገዉ ነበር?	1. አልሄድኩም 2. አንድ ጊዜ 3. 2 ጊዜ 4. 3 ጊዜ 5. 4 እና ከዚያ በላይ
303	አወ ካሉ ቅድመ ወሊድ በሚከታተሉበት ጊዜ ለህጻኑ/ኗ የሚሆን ምን አይነት መረጃ አገኙ ?	1. ስለ እናት ጡት ማጥባት 2. ስለ ተጨማሪ ምግብ 3. ስለ ክትባት 4. ስለ ፀሀይ ማሞቅ 5. ሌላ ካለ.....
304	ህጻኑ/ኗ የወለዱት የት ነዉ?	1. በቤት 2. በጤና ተቋም
305	ህጻኑ/ኗን ማን ነዉ ያዋለደወት?	1. የልምድ አዋላጅ 2.ጤና ባለሙያ
306	ህጻኑ/ኗን በምንድን ነዉ የወለዱት?	1. በማህጸን 2. በቀዶ ጥገና
307	ከወለዱ በኃላ በጤና ድርጅት ድህረ ወሊድ ክትትል አድርገዉ ያዉቃሉ?	1. አዎ 2. የለም
308	አወ ካሉ ለህጻኑ/ኗ የሚሆን ምን አይነት መረጃ አገኙ ?	1. ስለ እናት ጡት ማጥባት 2. ስለ ተጨማሪ ምግብ 3. ስለ ክትባት 4. ስለ ፀሀይ ማሞቅ 5. ሌላ ካለ.....
309	ስለጤናዎት ሁኔታ መች ነዉ ያዎቁት?	1. ከእረግዝና በፊት 2. በእርግዝና ጊዜ 3. በወሊድ ጊዜ 4. ከወሊድ በኃላ
310	ስለ ጤናዎት ሁኔታ ለማን ነዉ የነገሩት?	1. ለባለቤቴ 2. ለእናቴ አባቴ

		3. ወንድም እህቴ 4. ለጎደኛየ 5. ለማንም
311	የፀረ ኤች.አይ.ቪ መድሀኒት ክትትል አለዎት?	1. አዎ 2. የለም
312	አወ ካሉ መድሀኒት በሚከታተሉበት ጊዜ ለህጻኑ የሚሆን ምን አይነት መረጃ አገኙ ?	1. ስለ እናት ጡት ማጥባት 2. ስለ ተጨማሪ ምግብ 3. ስለ ክትባት 4. ስለ ፀሀይ ማሞቅ 5. ሌላ ካለ.....
313	የኤች.አይ.ቪ ከእናት ወደ ልጅ መተላለፍ መከላከያ አገልግሎት ተከታትለዋል	1. አዎ 2. የለም
314	አወ ካሉ መከላከያዉን ሲወስዱ ስለ ህጻናት አመጋገብ ትምህርት ተሰጥቶት ያዉቃል?	1. አዎ 2. የለም
315	ስለ ህጻናት አመጋገብ ትምህርት ከየት አገኙ?	1. ከጤና ባለሙያ 2. ከጎደኛ 3. ከዘመድ 4. ከቤተሰብ 5. ከመገናኛ ብዙሀን 6. ከየትም 7. ሌላ ካለ__
316	በሳምንት ለምን ያህል ጊዜ ቴሌቪዝን ይመለከታሉ?	1. አልመለከትም 2. በሳምንት እንድ ጊዜ 3. ቢያንስ በሳምንት እንድ ጊዜ በላይ 4. በየቀኑ
317	በሳምንት ለምን ያህል ጊዜ ራዲዮ ያደምጣሉ?	1. አላዳምጥም 2. በሳምንት እንድ ጊዜ 3. ቢያንስ በሳምንት እንድ ጊዜ በላይ
	ክፍል አራት፡-የምግብ አመጋገብ ልምድ ዳሰሳ	
401	ህጻኑ/ኗ አሁን የእናት ጡት ወተት እየጠባ ነዉ?	1. አዎ 2. የለም
402	አይደለም ካሉ መቼ ነው ያቆሙት	1. ከተወለደ ጀምሮ 2. ከ6 በፊት 3. በ 6 ወር 4. በ 1 አመት 5. ሌላ ካለ.....
403	አወ ካሉ ማጥባት መች ጀመሩለት	1. እንደተወለደ በ1 ሰአት ዉስጥ 2. ከ 1 ሰአተ በኃላ 3. ከ----------ቀን በኃላ
404	ለህጻኑ/ኗ ተጨማሪ ምግብ ጀምረዉለታል?	1. አዎ 2. የለም
405	ለህጻኑ/ኗ ተጨማሪ ምግብ /መጠጥ መስጠት ሲጀመሩ እድሜዉ ስንት ነበር(በወራት)?	( ) ወራት
406	ትላንት ጠዋት ጀምሮ እስከ ማታ (ቀን እና ሌሊት) ለህጻኑ/ኗ ምን ያህል ጊዜ ለስላሳ፣ፈሳሽ ምግቦችን ስጥተዉታል?ቅስ በቀስ እንድያስታዉሱ ያድርጉ	----------ቁጥር ----------አላዉቀዉም ----------ሲያስገልገዉ/አት1

ትላንትና ጸሀይ ከወጣች ጊዜ ጀምሮ እስከ ጠለቀች ድረስ በቀንም ይሁን በማታ ልጅዎትን ከቤትም ይሁን ከቤት ዉጭ ምን መገቡት/መገቢት እባኮት ሁሉንም በማሰታዋስ ምንም ሳይቀር ይንገሩኝ።(የሚዘረዝሩትን ምግቦች በሙሉ፣እንዲሁም ያን ምግብ ለማዘጋጅት ለግብአትነት ጥቅም ላይ የዋሉትን በሙሉ ይዘርዝሯቸዉ።ለምሳሌ እንጅራ፣ወጥ የመሳሰሉት።በተጨማሪ ምን አይነት ስጋ፣ምን አይነት ወተት፣ምን አይነት ጥራጥሬ ወዘተ በዝርዝር ይግለጹ።

መልስ ሰጭዋ ምግቡን ሲጠሩ ከምግብ ዝርዝር ስሩ ላይ ያስምሩበት (ከምግቡ ዝርዝር ዉስጥ አዎ የሚል ከሌለ በእያንዳንዱ ምግብ ክፍል ዉስጥ ያሉትን ዝርዝሮች በእርጋታ እያነበባችሁ መልስ እንዲሰጡ አድርጉ።) በትላንትላዉ እለት ምግብ ክፍሉ ዉስጥ ከተዘረዘሩት አንዱን መግበዉ ከሆነ በፊት ለፊት ባሉት አማራጮች ላይ ምልክት አድርጉ።

ጥያቄ	የምግብ አይነት	በትንሹ አንድ ምግብ አይነት	የለም	አላዉቅም
407	እንጀራ፣ዳቦ/ቂጣ፣ገንፎ፣ሩዝ፣ፓስታ/ከአዝእርት የተዘጋጁ ምግቦች ከጤፍ፣በቆሎ፣ገብስ፣ስንዴ፣ዳጉሳ፣ማሽላ	1. አዎ	2.አልወሰደም	3. አላዉቅም
408	ዱባ፣ካሮት፣ስኳር ድንች፣(በዉስጣቸዉ ብርቱካናማ ቀለምና ቀለም ያላቸዉ ምግቦች)	1. አዎ	2.አልወሰደም	3. አላዉቅም
409	ድንች፣ቀይስር	1. አዎ	2.አልወሰደም	3.አላዉቅም
410	ከጥራጥሬ(ባቄላ፣አተር፣ምስር፣ጓያ፣አኾሎኒ፣ኑግ፣ሰሊጥ፣ሱፍ፣ነፍስ አድን ንጥረ ነገር) የተዘጋጁ ምግቦች	1. አዎ	2.አልወሰደም	3.አላዉቅም
411	ማናቸዉም ደማቅ አረንጓዴ ቅጠል ያላቸዉ አትክልቶች እንደ ሃበሻ ጎመን፣ሰላጣ፣ቆስጣ	1. አዎ	2.አልወሰደም	3.አላዉቅም
412	የበሰለ ማንጎ፣ፓፓያ	1. አዎ	2.አልወሰደም	3.አላዉቅም
413	ከላይያልተጠቀሱፍራፍሬናአትክልቶች(ሙዝ፣አቮካዶ፣አናናስ፣አፕል፣ጥቅል:ጎመን፣ቲማቲም)	1. አዎ	2.አልወሰደም	3.አላዉቅም
414	ገበት፣ኩላሊት፣ልብ ወይም ሌሎች የሆድ እቃዎችን ጨምሮ የአካል ክፍል ስጋዎች	1. አዎ	2.አልወሰደም	3.አላዉቅም
415	ማናቸዉም የስጋ አይነት የበሬ፣የበግ፣የፍየል፣የደሮ) ቋንጣ፣የቋንጣ ዱቄት	1. አዎ	2.አልወሰደም	3.አላዉቅም
416	አሳና ሌሎች የባህር ምግቦች	1. አዎ	2.አልወሰደም	3.አላዉቅም
417	እንቁላል	1. አዎ	2.አልወሰደም	3.አላዉቅም
418	ወተት፣አይብ፣እርጎና ሌሎች የወተት ተዋጽኦዎች	1. አዎ	2.አልወሰደም	3.አላዉቅም
419	ማናቸዉም ቅቤ፣ስብ፣ዘይት	1. አዎ	2.አልወሰደም	3.አላዉቅም
420	ጣፋጭ ምግቦች እንደ ብስኩት፣ኬክ፣ቸኮሌት፣ከረሚላ፣ለስላሳ መጠጣች	1. አዎ	2.አልወሰደም	3.አላዉቅም
421	ቅመማቅመሞች እንደ ቃሪያ፣እርድ፣ኮረሪማ፣ጨዉ	1. አዎ	2.አልወሰደም	3.አላዉቅም
422	መልስ ሰጭዋ ከተዘረዘሩት ዉስጥ ከሌለ ከዚህ ላይ ይጻፍ			
. ጠቅላላ የምግብ ስብጥር				
ከዚህ በመቀጠል በቀን ስንት ጊዜ ምግብ ለልጅዎ እንደሰጡት/ጧት ልጠይቅዎት ነዉ(ትላንትና ጸሀይ ከወጣች ጊዜ ጀምሮ እስከጠለቀች በቀንም ይሁን በማታ ከቤትም ይሁን ከቤት ዉጭ)				
423	ወተትን ሣይጨምር ሌሎች የምግብ አይነቶች ስንት ጊዜ መገቡ/ቢ/ት?	----------ጊዜ		
424	ሌሎች የምግብ አይነቶች ሳይጨምር በቀን ስንት ጊዜ ወተት አጠጡት/ጧ/ት?	----------ጊዜ		
425	በማህበረሰብ ዉስጥ ለህፃናት የተከለከለ ምግብ አለ ?	1. አዎ	2. የለም	

ክፍል አምስት፤ከሀብትጋርየተያያዙጥያቄዎች

501	ከቤተሰቡ መሀል የባንክ ደብተር አላችሁ?	1. አዎ 2. የለም
502	በቤትዎ ዉስጥ የሚከተሉት እንሰሳት ይገኛሉ?	
	በሬ ፣ላም፣ወይፈን፣ጊደር	1. አዎ 2. አይገኝም
	አህያ፣በቅሎ፣ፈረስ	1. አዎ 2. አይገኝም
	ፍየል፣በግ	1. አዎ 2. አይገኝም
	ደሮ	1. አዎ 2. አይገኝም
503	የሚከተሉት ቁሳቁሶች በቤትዎ ይገኛሉ?	
	ኤሌክትሪክ አገልግሎት	1. አዎ 2. አይገኝም
	የግድግዳ ስአት	1. አዎ 2. አይገኝም
	ራዲዮ	1. አዎ 2. አይገኝም
	ቴሌቪዥን	1. አዎ 2. አይገኝም
	ሞባይል ስልክ	1. አዎ 2. አይገኝም
	የቤት ስልክ	1. አዎ 2. አይገኝም
	ፍሪጅ	1. አዎ 2. አይገኝም
	ጠረጴዛ፤ወንበር	1. አዎ 2. አይገኝም
	መዝቦልድ አልጋ	1. አዎ 2. አይገኝም
	የኤሌክትሪክ ምጣድ	1. አዎ 2. አይገኝም
	ፋኖስ	1. አዎ 2. አይገኝም
504	ለምግብ ማብሰያ የሚጠቀሙት ምንድን ነዉ	1. ኤሌክትሪክ 2. ነጭ ጋዝ 3. ከሰል 4. እንጨት 5. ኩበት 6. ሌላ ካለ.....
505	የቤቱ ጣራ የተሰራዉ ከምንድን ነዉ?	1. ከቆርቆሮ 2. ከሳር 3. ከእንጨትና ከጭቃ 4. ከጭቃና ከድንጋይ 5. ከቀርቀሃ 6. ሌላ(ይጠቀስ)----------
506	የቤቱ ወለል በአብዛኛዉ የተሰራበት ቁስ ምንድን ነዉ?	1. መሬት 2. ከኮብት አዛባ 3. ከሲሚንቶ 4. ሴራሚክ 5. ሌላ----------
507	የቤቱ ግድግዳ የተሰራዉ ከምንድን ነዉ?	1. ከእንጨትና ከጭቃ 2. ከቀርቀሃ 3. ከጭቃና ከድንጋይ

		4. ከድንጋይና ሲሚንቶ 5. ሌላ----------
508	የቤተሰቡ የምግብ ምንጭ ምንድን ነዉ?	1. በራሳችሁ ከምታመርቱት 2. ከግዥ 3. ከርዳታ 4. በጋራ ከሚመረቱት 5. ሌላ ካለ ይጠቀስ----------
509	የእርሻ መሬት አልዎት?	1. አዎ 2.የለም ኝ
510	ጥያቄ 509 አዎ ከሆነ የእርሻ መሬቱ ብዛት ምን ያህል ነዉ?	1. ከ አንድ ጥማድ በታች 2. ከ1-2.99 ጥማድ 2. ከ 3-4.99 ጥማድ 3. ከ5 -6.99 ጥማድ 4.ከ7 -9.99 ጥማድ 5.ከ 10 ጥማድ በላይ
601	ባለፉት አራት ሳምንታት በቤተሰብ ደረጃ በቂ ምግብ አይኖርም በሚል ጭንቀት ላይ ነበሩ ወይ?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ (አንድጊዜወይምሁለትጊዜ) 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
602	ባለፉት አራት ሳምንታት በቤት ዉስጥ የምግብ እጥረት በመኖሩ ምክኒያት የሚፈልጉትን የምግብ አይነት ለቤተሰብዎ አባል መመገብ ተቸግረዉ ነበር?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
603	ባለፉት አራት ሳምንታት እርስዎም ሆነ ማንኛዉም የቤተሰብ አባል የሚፈልጉትን የምግብ አይነት በማጣትዎት ምክንያት የማይፈልጉትን ምግብ ተመግበዉ ነበረ?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
604	ባለፉት አራት ሳምንታት እርስዎም ሆነ ማንኛዉም የቤተሰብ አባል በቤት ዉስጥ በቂ ምግብ ባለመኖሩ ምክኒያት የሚፈልጉትን ያክል ምግብ መመገብ አልቻሉም ነበር?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
605	ባለፉት አራት ሳምንታት እርስዎም ሆነ ማንኛዉም የቤተሰብ አባል በቤት ዉስጥ በቂ ምግብ ባለመኖሩ ምክኒያት በቀን አነስ ያለ ምግብ ለመመገብ ተገደዉ ነበር?	0. አልነበረም 1. አዎ ነበረ

	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. 1.አንዳንድጊዜ(አንድጊዜወይምሁለት ጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
606	ባለፉት አራት ሳምንታት በቤት ዉስጥ በችግር ምክንያት ምንም አይነት የሚበላ ምግብ ጠፍቶ ነበረ ወይ?	0. አልጠፋም 1. አዎ ጠፍቶ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
607	ባለፉት አራት ሳምንታት እርስዎም ሆነ ማንኛዉም የቤተሰብ አባል በቤት ዉስጥ በቂ ምግብ ባለመኖሩ ምክኒያት እየራባቸዉ ተኝታችሁ ነበር?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
608	ባለፉት አራት ሳምንታት እርስዎም ሆነ ማንኛዉም የቤተሰብ አባል በቤት ዉስጥ በቂ ምግብ ባለመኖሩ ምክኒያት ሙሉ ቀን እና ለሊት ምግብ ያልተመገቡበት ጊዜ ነበር?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
609	ባለፉት አራት ሳምንታት በቤት ዉስጥ የምግብ እጥረት በመኖሩ ምክኒያት እርስዎ ወይም የእርስዎ ቤተሰብ የተወሰኑ የምግብ አይነቶችን በቤተሰብ ደረጃ ለመመገብ ተገደዉ ነበር?	0. አልነበረም 1. አዎ ነበረ
	አወ ካሉ ለምንያክልጊዜተከሰተ?	1. አንዳንድጊዜ(አንድጊዜወይምሁለትጊዜ) 2. አልፎ አልፎ (3-10 ጊዜ) 3. ብዙ ጊዜ (10 ጊዜበላይ)
	ክፍል ሰባት፤ የህጻኑ/ኗ የምግብ ሁኔታ ዳሰሳ	
701	የህጻኑ/ኗ ክብደት ልኬታ	……..ኪ.ግ
702	የህጻኑ/ኗ ቁመት ልኬታ	----------ሳ.ሜ
703	የህጻኑ/ኗ የክንድ ዙሪያ ልኬት(ሙአክ) (ከህጻኑ/ኗየግራ እጅ ላይ ይወሰድ)	----------ሳሜ

11.5 Declaration

I, the undersigned, MPH student declare that this tesis is my original work in partial fulfillment of the requirement for the degree of Master of public health in Human Nutrition

Name: _____

Signature: _____

Place of submission: Institute of public Health, College of Medicine and Health Sciences, University of Gondar.

Date of Submission: _____

This proposal work has been submitted with my/ our approval as university advisor(s).

Advisors

	Name	Signature
1.	_____	_____
2.	_____	_____